

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number
WO 2005/081069 A1(51) International Patent Classification:
G03F 7/20 (2006.01) H01L 21/66 (2006.01)(21) International Application Number:
PCT/NL2005/000129(22) International Filing Date:
22 February 2005 (22.02.2005)

(25) Filing Language: English

(26) Publication Language: English

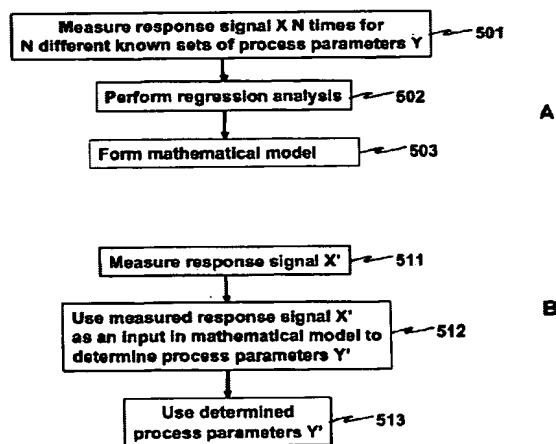
(30) Priority Data:
60/546,165 23 February 2004 (23.02.2004) US
10/853,724 26 May 2004 (26.05.2004) US(71) Applicant (for all designated States except US): ASML
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Hague (NL).(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
ZA, ZM, ZW.(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHOD TO DETERMINE THE VALUE OF PROCESS PARAMETERS BASED ON SCATTEROMETRY DATA



(57) **Abstract:** A method according to an embodiment includes obtaining calibration measurement data, with an optical detection apparatus, from a plurality of marker structure sets provided on a calibration substrate. Each marker structure set includes at least one calibration marker structure created using different known values of the process parameter. The method includes obtaining measurement data, with the optical detection apparatus, from at least one marker structure provided on a substrate and exposed using an unknown value of the process parameter; and determining the unknown value of the process parameter from the obtained measurement data by employing regression coefficients in a model based on the known values of the process parameter and the calibration measurement data.